

What is claimed is:

1. An apparatus for reading a chemical indicator for monitoring a  
5 sterilization process, the chemical indicator comprising a substantially flat surface  
and a sterilizing agent sensitive ink associated with the surface, the ink providing a  
first indicating state prior to being exposed to the sterilization process, and a  
second indicating state after being exposed to at least a portion of the sterilization  
process, the apparatus comprising:
- 10 a) an illumination source for directing energy toward the surface;  
b) a detector for collecting energy reflected from the surface and for  
providing a signal based on the energy from the surface;  
c) positioning means for positioning the surface of the chemical indicator  
relative to the illumination source and the detector;
- 15 d) a controller for controlling the detector and illumination source; and  
e) processing means for processing the signal from the detector, for  
distinguishing the first and second states, and for determining whether the chemical  
indicator is in said first or said second state.
- 20 2. An apparatus according to claim 1 wherein the illumination source is  
capable of providing light at an angle of incidence with the surface of more than  
approximately ten degrees and less than ninety degrees.
- 25 3. An apparatus according to claim 2 wherein the detector collects light  
from the surface at a substantially normal angle.
4. An apparatus according to claim 1 wherein the illumination source is  
capable of scanning through a variety of wavelengths of light.
- 30 5. An apparatus according to claim 1 wherein the illumination source  
comprises a plurality of light sources capable of providing different wavelengths of  
light and an optical mixer.

6. An apparatus according to claim 4 wherein the detector is sensitive in a substantially repeatable fashion to a variety of light sources.

5           7. An apparatus according to claim 1 wherein the processing means includes nonvolatile memory that includes reference data.

8. An apparatus according to claim 7 wherein the reference data includes data generated from sterilization indicators that have been exposed to varying  
10 degrees of a sterilization process.

9. An apparatus according to claim 7 wherein the processing means includes means for comparing information generated from said chemical indicator with reference data.

15           10. An apparatus according to claim 7 wherein the processing means includes means for calibrating components of the apparatus.

20           11. The apparatus of claim 1 further comprising means for reading at least a portion of a bar code printed from a permanent, substantially colorfast ink.

25           12. An apparatus according to claim 1 further including output means for communicating the results of the chemical indicator to a user or another computer.

30           13. An apparatus according to claim 1 wherein the chemical indicator comprises a code comprising a portion including a permanent, substantially colorfast ink and a portion comprising a sterilization process sensitive ink, the code having a spatial size and position; and the apparatus comprises a linear charge coupled device (CCD) capable of detecting the spatial size and position of said code.

